

# **EXHIBIT 7**

**UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS**

**U.S. Patent No. 11,108,595 – Defendant VMware Inc. - UMBRA Technologies Ltd. (“UMBRA”)**

**Claim 1**

UMBRA Technologies Ltd. (“UMBRA”) provides evidence of infringement of claim 1 of U.S. Patent No. 11,108,595 (hereinafter “the ’595 patent”) by VMware Inc. (“VMware”). In support thereof, UMBRA provides the following claim charts.

“Accused Instrumentalities” as used herein refers to at least VMware systems and methods, including one or more hardware and software products for network virtualization and related services, which by way of example include but are not limited to VMware SD-WAN, (*see, e.g.*, VMware SD-WAN, <https://www.vmware.com/products/sd-wan.html>), VMware NSX software-defined data center (*see, e.g.*, VMware NSX, <https://www.vmware.com/products/nsx.html>), VMware vSphere (*see, e.g.*, VMware vSphere, <https://www.vmware.com/products/vsphere.html>), and VMware Horizon (*see, e.g.*, VMware Horizon, <https://www.vmware.com/products/horizon.html>) and related earlier versions (the “Accused Instrumentalities”). These claim charts demonstrate VMware’s infringement, and provide notice of such infringement, by comparing each element of the asserted claims to corresponding components, aspects, and/or features of the Accused Instrumentalities. These claim charts are not intended to constitute an expert report on infringement. These claim charts include information provided by way of example, and not by way of limitation.

The analysis set forth below is based only upon information from publicly available resources regarding the Accused Instrumentalities, as VMware has not yet provided any non-public information. An analysis of VMware’s (or other third parties’) technical documentation and/or software source code may assist in fully identifying all infringing features and functionality. Accordingly, UMBRA reserves the right to supplement this infringement analysis once such information is made available to UMBRA. Furthermore, UMBRA reserves the right to revise this infringement analysis, as appropriate, upon issuance of a court order construing any terms recited in the asserted claims. UMBRA provides this evidence of infringement and related analysis without the benefit of claim construction or expert reports or discovery. UMBRA reserves the right to supplement, amend or otherwise modify this analysis and/or evidence based on any such claim construction or expert reports or discovery.

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**Claim 1**

Unless otherwise noted, UMBRA contends that VMware directly infringes the '595 patent in violation of 35 U.S.C. § 271(a) by selling, offering to sell, making, using, and/or importing the Accused Instrumentalities. The following exemplary analysis demonstrates that infringement. Unless otherwise noted, UMBRA further contends that the evidence below supports a finding of indirect infringement under 35 U.S.C. §§ 271(b) and/or (c), in conjunction with other evidence of liability under one or more of those subsections. VMware makes, uses, sells, imports, or offers for sale in the United States, or has made, used, sold, imported, or offered for sale in the past, without authority, or induces others to make, use, sell, import, or offer for sale in the United States, or has induced others to make, use, sell, import, or offer for sale in the past, without authority products, equipment, or services that infringe claim 1 of the '595 patent, including without limitation, the Accused Instrumentalities.

Unless otherwise noted, UMBRA believes and contends that each element of each claim asserted herein is literally met through VMware's provision of the Accused Instrumentalities. However, to the extent that VMware attempts to allege that any asserted claim element is not literally met, UMBRA believes and contends that such elements are met under the doctrine of equivalents. More specifically, in its investigation and analysis of the Accused Instrumentalities, UMBRA did not identify any substantial differences between the elements of the patent claims and the corresponding features of the Accused Instrumentalities, as set forth herein. In each instance, the identified feature of the Accused Instrumentalities performs at least substantially the same function in substantially the same way to achieve substantially the same result as the corresponding claim element.

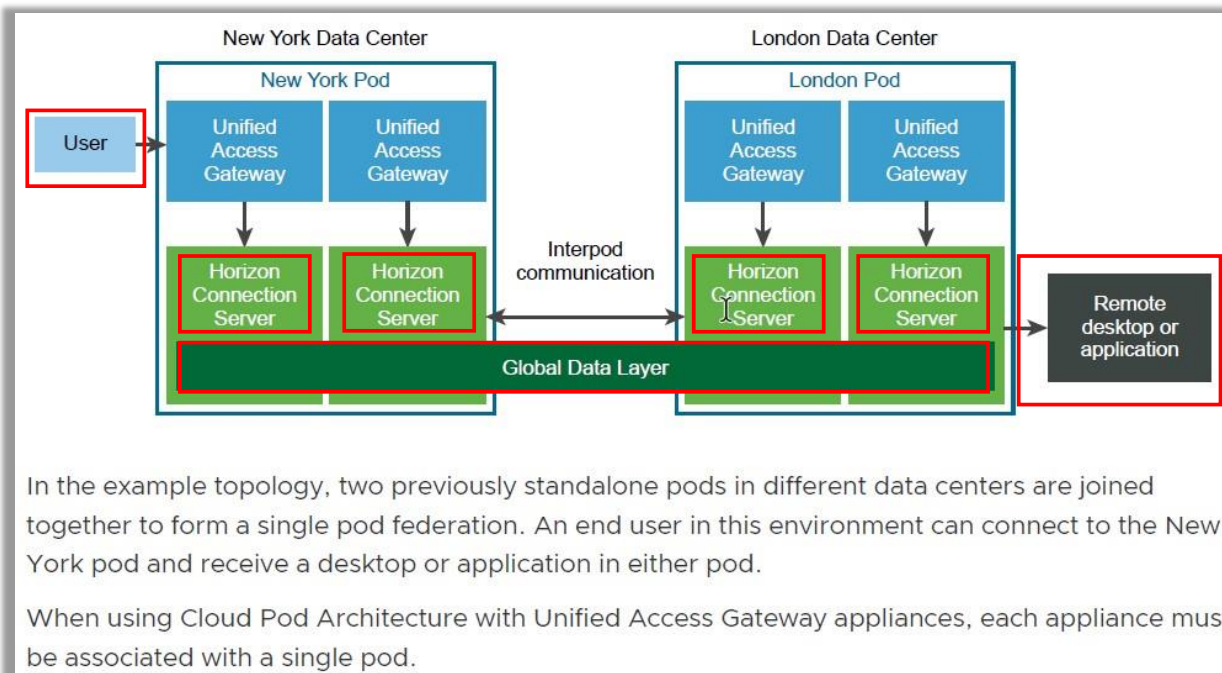
To the extent the chart of an asserted claim relies on evidence about certain specifically identified Accused Instrumentalities, UMBRA asserts that, on information and belief, any similarly functioning instrumentalities also infringes the charted claim. UMBRA reserves the right to amend this infringement analysis based on other products made, used, sold, imported, or offered for sale by VMware. UMBRA also reserves the right to amend this infringement analysis by citing other claims of the '595 patent, not listed in the claim chart, that are infringed by the Accused Instrumentalities. UMBRA further reserves the right to amend this infringement analysis by adding, subtracting, or otherwise modifying content in the “Accused Instrumentalities” column of each chart.

## UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,108,595 – Defendant VMware Inc. - UMBRA Technologies Ltd. (“UMBRA”)

## Claim 1

Claim #1	Accused Instrumentalities
<p>Indep.Cl. 1 1-p</p> <p>1. A method comprising:</p>	<p>VMware implements the claimed method in the Cloud based Pod architecture of their VMware Horizon products as explained below.</p>
<p>1-a</p> <p>receiving, by one or more computer processors, a request for a list of available servers from a network device;</p>	<p>VMware’s Horizon Connection Servers, i.e., one or more computers, receive a request for a list of available desktops and applications that reside in pools of servers.</p> <div data-bbox="499 643 1398 1073" style="border: 1px solid red; padding: 10px;"> <p><b>Horizon Connection Server</b></p> <p>This software service acts as a broker for client connections in Horizon 8 environments. Horizon Connection Server authenticates users through Windows Active Directory and directs the request to the appropriate virtual machine, physical PC, or Microsoft RDS host.</p> <p>Connection Server provides the following management capabilities:</p> <ul style="list-style-type: none"> <li>▪ <u>Authenticating users</u></li> <li>▪ <u>Entitling users to specific desktops and pools</u></li> <li>▪ Managing remote desktop and application sessions</li> <li>▪ Establishing secure connections between users and remote desktops and applications</li> <li>▪ Enabling single sign-on</li> <li>▪ Setting and applying policies</li> </ul> </div> <p>Source: Horizon Overview and Deployment Planning, p.16, <a href="https://docs.vmware.com/en/VMware-Horizon/2303-and-later/horizon-architecture-planning.pdf">https://docs.vmware.com/en/VMware-Horizon/2303-and-later/horizon-architecture-planning.pdf</a>_ (annotations added)</p> <div data-bbox="499 1240 1503 1312" style="border: 1px solid gray; padding: 5px;"> <p><u>When an entitled user uses Horizon Client to connect to a Connection Server instance in the pod federation, the global entitlement name appears in the list of available desktops and applications.</u></p> </div>

**UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS****U.S. Patent No. 11,108,595 – Defendant VMware Inc. - UMBRA Technologies Ltd. (“UMBRA”)****Claim 1**1-a  
Cont.Source: Cloud Pod Architecture in Horizon, p.38, <https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf>\_ (annotations added)Source: Cloud Pod Architecture in Horizon, p.9, <https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf>\_ (annotations added)

**UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS**

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**Claim 1**

<p>1-a Cont.</p>	<div data-bbox="506 318 1698 440"><p>The Cloud Pod Architecture feature uses standard VMware Horizon components to provide cross-data center administration, global and flexible user-to-desktop mapping, high availability desktops, and disaster recovery capabilities.</p></div> <div data-bbox="506 461 1698 532"><p>With the Cloud Pod Architecture feature, you can link together multiple pods to provide a single large desktop and application brokering and management environment.</p></div> <div data-bbox="506 553 1698 743"><p><u>A pod consists of a set of Connection Server instances, shared storage, a database server, and the vSphere and network infrastructures required to host desktop and application pools.</u> In a traditional Horizon 8 implementation, you manage each pod independently. With the Cloud Pod Architecture feature, you can join together multiple pods to form a single Horizon 8 implementation called a pod federation.</p></div> <div data-bbox="506 764 1698 836"><p>A pod federation can span multiple sites and data centers and simultaneously simplify the administration effort required to manage a large-scale Horizon 8 deployment.</p></div> <div data-bbox="478 857 1604 928"><p>Source: Cloud Pod Architecture in Horizon, p.8, <a href="https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf">https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf</a> (annotations added)</p></div>
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**UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS**

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**Claim 1**

<p>1-b</p> <p>retrieving, by the one or more computer processors, the list of available servers;</p>	<p>VMWare’s Horizon Connection Servers retrieves available list of desktops and applications associated with the requesting client and are available from the pools of servers in the pods.</p> <div data-bbox="510 467 1638 1003"><p><b>Horizon Connection Server</b></p><p>This software service acts as a broker for client connections in Horizon 8 environments. Horizon Connection Server authenticates users through Windows Active Directory and directs the request to the appropriate virtual machine, physical PC, or Microsoft RDS host.</p><p>Connection Server provides the following management capabilities:</p><ul style="list-style-type: none"><li>■ <u>Authenticating users</u></li><li>■ <u>Entitling users to specific desktops and pools</u></li><li>■ <u>Managing remote desktop and application sessions</u></li><li>■ Establishing secure connections between users and remote desktops and applications</li><li>■ Enabling single sign-on</li><li>■ Setting and applying policies</li></ul></div> <p>Source: Horizon Overview and Deployment Planning, p.16, <a href="https://docs.vmware.com/en/VMware-Horizon/2303-and-later/horizon-architecture-planning.pdf">https://docs.vmware.com/en/VMware-Horizon/2303-and-later/horizon-architecture-planning.pdf</a> (annotations added)</p>
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## UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

U.S. Patent No. 11,108,595 – Defendant VMware Inc. - UMBRA Technologies Ltd. (“UMBRA”)

## Claim 1

<p>1-c</p> <p>retrieving, by the one or more computer processors, one or more records associated with the network device;</p>	<p>VMware’s Horizon Connection Server retrieves records associated with the client devices are represented by their global entitlement and scope policy.</p> <p>The global entitlement contains a list of user/group members, a list of desktop and application pools, and a scope policy. The scope policy specifies which pool to look for desktops or applications including the preferred pod.</p> <div data-bbox="506 570 1640 1117" style="border: 1px solid red; padding: 10px;"> <p><b>Horizon Connection Server</b></p> <p>This software service acts as a broker for client connections in Horizon 8 environments. Horizon Connection Server authenticates users through Windows Active Directory and directs the request to the appropriate virtual machine, physical PC, or Microsoft RDS host.</p> <p>Connection Server provides the following management capabilities:</p> <ul style="list-style-type: none"> <li>■ <u>Authenticating users</u></li> <li>■ <u>Entitling users to specific desktops and pools</u></li> <li>■ Managing remote desktop and application sessions</li> <li>■ Establishing secure connections between users and remote desktops and applications</li> <li>■ Enabling single sign-on</li> <li>■ <u>Setting and applying policies</u></li> </ul> </div> <p>Source: Horizon Overview and Deployment Planning, p.16, <a href="https://docs.vmware.com/en/VMware-Horizon/2303-and-later/horizon-architecture-planning.pdf">https://docs.vmware.com/en/VMware-Horizon/2303-and-later/horizon-architecture-planning.pdf</a> (annotations added)</p>
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July 31, 2023

Note: All internet sources last accessed and downloaded July 31, 2023.



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Claim 1

1-c  
Cont.

You entitle users and groups to applications by creating global application entitlements. Each global application entitlement contains a list of the member users or groups, a list of the application pools that can provide applications for entitled users, and a scope policy.

Source: Cloud Pod Architecture in Horizon, pp.12, <https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf> (annotations added)

When a user requests a desktop or application from a global entitlement, VMware Horizon 8 searches for an available desktop or application in the pools that are associated with that global entitlement. By default, Horizon 8 gives preference to the local pod, the local site, and pods in other sites, in that order.

A global entitlement's scope policy specifies where Horizon 8 looks for desktops or applications when it allocates desktops or applications to users in the global entitlement. It also determines whether Horizon 8 looks for desktops or applications in any pod in the pod federation, in pods that reside in the same site, or only in the pod to which the user is connected.

Source: Cloud Pod Architecture in Horizon, p.13, <https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf> (annotations added)

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**Claim 1**

<p>1-d  dynamically ordering, by the one or more computer processors, the list of available servers based on the one or more records associated with the network device; and</p>	<p>VMWare’s Horizon Horizon Connection Servers dynamically delivers lists of available pools based on the location of the network device associated with a user and its global entitlement and scope policy. Horizon Connection Servers search resources on pods in the same site as the pod to which the user is connected and delivers pools that are located nearest the site where the user is located. On the other hand, if the scope policy is defined as “ANY“, it searches across all available pods to assign pools.</p> <div data-bbox="520 574 1776 730" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p>When a user requests a desktop or application from a global entitlement, <u>VMware Horizon 8 searches for an available desktop or application in the pools that are associated with that global entitlement. By default, Horizon 8 gives preference to the local pod, the local site, and pods in other sites, in that order.</u></p> </div> <p><u>Source: Cloud Pod Architecture in Horizon, p.13, <a href="https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf">https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf</a> (annotations added)</u></p> <div data-bbox="510 889 1770 1045" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p><u>A global entitlement's scope policy specifies where Horizon 8 looks for desktops or applications when it allocates desktops or applications to users in the global entitlement. It also determines whether Horizon 8 looks for desktops or applications in any pod in the pod federation, in pods that reside in the same site, or only in the pod to which the user is connected.</u></p> </div> <p><u>Source: Cloud Pod Architecture in Horizon, p.13, <a href="https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf">https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf</a> (annotations added)</u></p>
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**UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS**

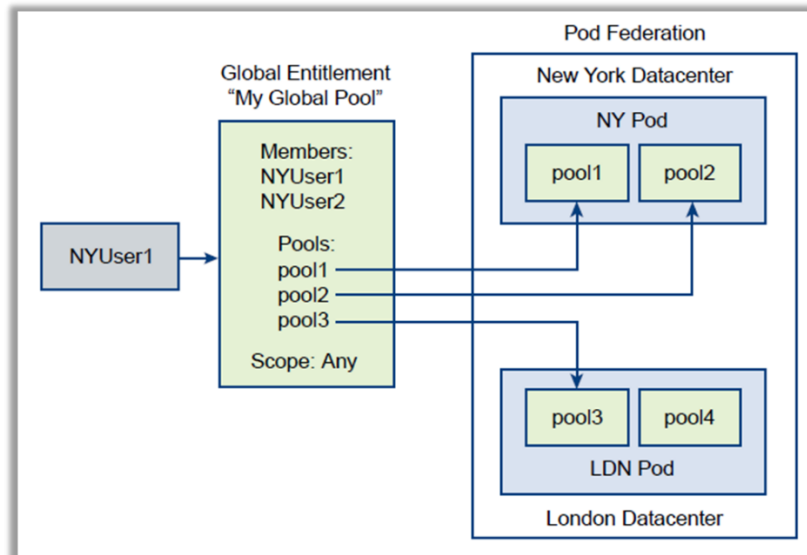
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**Claim 1**

1-d  
Cont.

For example, if a user who has a home site in New York accesses a global entitlement that associates that user with the London home site, Horizon 8 begins looking in the London site to satisfy the user's application request rather than allocating an application from the New York site.

Source: Cloud Pod Architecture in Horizon, p.15, <https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf> (annotations added)



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**Claim 1**

1-d  
Cont.

Because My Global Pool has a scope policy of ANY, the Cloud Pod Architecture feature looks for desktops across both NY Pod and LDN Pod when NYUser1 requests a desktop. The Cloud Pod Architecture feature does not try to allocate a desktop from pool4 because pool4 is not part of My Global Pool.

If NYUser1 logs into NY Pod, the Cloud Pod Architecture feature allocates a desktop from pool1 or pool2, if a desktop is available. If a desktop is not available in either pool1 or pool2, the Cloud Pod Architecture feature allocates a desktop from pool3.

Source: Cloud Pod Architecture in Horizon, p.16, <https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf> (annotations added)

The insurance company uses a single URL and employs a DNS service to resolve sales.example to the nearest pod in the nearest data center. With this arrangement, sales agents do not need to remember different URLs for each pod and are always directed to the nearest data center, regardless of where they are located.

When a sales agent connects to the URL in Horizon Client, the Agent Sales global entitlement appears on the list of available desktop pools. When a sales agent selects the global desktop entitlement, the Cloud Pod Architecture feature delivers the nearest available desktop in the pod federation. If all of the desktops in the local data center are in use, the Cloud Pod Architecture feature selects a desktop from the other data center. If a sales agent leaves a desktop session logged in, the Cloud Pod Architecture feature returns the sales agent to that desktop, even if the sales agent has since traveled to a different region.

Source: Cloud Pod Architecture in Horizon, p.45, <https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf> (annotations added)

## UMBRA TECHNOLOGIES LTD.'S FIRST INFRINGEMENT ANALYSIS

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## Claim 1

<p>1-e</p> <p>transmitting, by the one or more computer processors, the ordered list of available servers to the network device.</p>	<p>VMware’s Connection Servers deliver a list of available desktops/applications residing in pods to the client device according to the global entitlement and scope policy.</p> <p>A list of available desktops/applications is provided to the Horizon client by the Connection Server, e.g., “Windows 10 Desktop, RDSH-Calculator, and RDSH-Paint.”</p> <p><u>When an entitled user uses Horizon Client to connect to a Connection Server instance in the pod federation, the global entitlement name appears in the list of available desktops and applications.</u></p> <p>Source: Cloud Pod Architecture in Horizon, p.38, <a href="https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf">https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf</a>_ (annotations added)</p> <p><u>When a sales agent connects to the URL in Horizon Client, the Agent Sales global entitlement appears on the list of available desktop pools. When a sales agent selects the global desktop entitlement, the Cloud Pod Architecture feature delivers the nearest available desktop in the pod federation. If all of the desktops in the local data center are in use, the Cloud Pod Architecture feature selects a desktop from the other data center. If a sales agent leaves a desktop session</u></p> <p>Source: Cloud Pod Architecture in Horizon, p.45, <a href="https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf">https://docs.vmware.com/en/VMware-Horizon/2206/horizon-cloud-pod-architecture.pdf</a>_ (annotations added)</p> <p><u>Horizon Connection Server acts as a broker for client connections by authenticating and then directing incoming user requests to the appropriate remote desktops and applications. Horizon Connection Server has specific hardware, operating system, installation, and supporting software requirements.</u></p> <p>Source: Horizon Installation and Upgrade, p.9, <a href="https://docs.vmware.com/en/VMware-Horizon/2206/horizon-installation.pdf">https://docs.vmware.com/en/VMware-Horizon/2206/horizon-installation.pdf</a>_ (annotations added)</p>
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Claim 1

1-e  
Cont.

Prerequisites for Connecting to a Desktop or Application with Horizon Client

To perform this exercise, you need the following:

- **Endpoint PC** – You can use a Mac, Linux, or Windows PC.
- **Horizon Client installed** – Go to the [Download VMware Horizon Clients](#) page, and download and install the free Horizon Client software.
- **User account with admin privileges** – To install the Horizon Client software, you must log in to the endpoint device as a user with administrative privileges.
- **Connection Server address** – Verify that you have the fully qualified domain name of the Connection Server that brokers connections to the desktop and application pools you created in earlier exercises.
- **Desktop or application pools** – Exercises for creating pools are included in the chapters [Creating Single-User Desktop Pools](#) and [Creating RDSH-Published Desktops and Applications](#).

Source: Quick-Start Tutorial for VMware Horizon 8, p.53,  
[https://techzone.vmware.com/api/checkuseraccess?referer=/sites/default/files/Quick-Start-Tutorial-for-VMware-Horizon-8\\_0.pdf](https://techzone.vmware.com/api/checkuseraccess?referer=/sites/default/files/Quick-Start-Tutorial-for-VMware-Horizon-8_0.pdf) (annotations added)

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**Claim 1**

1-e  
Cont.

**Launch a Virtual Desktop or Published App**

1. On your client computer, start VMware Horizon Client the same way you would start any application. For example, on a Windows PC, double-click the desktop icon.
2. In the VMware Horizon Client window, click the **New Server** button.
3. When prompted, enter the FQDN of the Connection Server, and click **Connect**.
4. If you receive a security warning, click **Continue** to bypass the certificate warning. If you install a CA-signed security certificate on the machine that hosts the Connection Server, this warning does not appear.
5. In the Login dialog box, enter the user name and password of a user who is entitled to the desktop or published applications, and click **Login**.
6. To launch an application or desktop, double-click the icon for the application or desktop.

*Id.*, p. 54

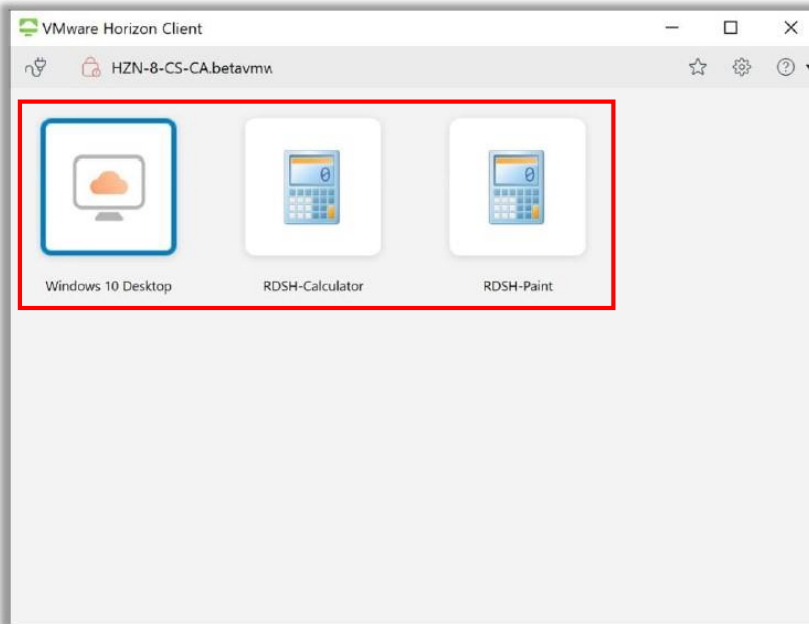


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**Claim 1**

1-e  
Cont.



Source: Quick-Start Tutorial for VMware Horizon 8, p.54,  
[https://techzone.vmware.com/api/checkuseraccess?referer=/sites/default/files/Quick-Start-Tutorial-for-VMware-Horizon-8\\_0.pdf](https://techzone.vmware.com/api/checkuseraccess?referer=/sites/default/files/Quick-Start-Tutorial-for-VMware-Horizon-8_0.pdf) (annotation added)

**Caveat:** The notes and/or cited excerpts utilized herein are set forth for illustrative purposes only and are not meant to be limiting in any manner. For example, the notes and/or cited excerpts, may or may not be supplemented or substituted with different excerpt(s) of the relevant reference(s), as appropriate. Further, to the extent any error(s) and/or omission(s) exist herein, all rights are reserved to correct the same.